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ABSTRACT

An administrator discusses aspects of drug therapy with which special educators should be familiar. Briefly examined are administration form, factors affecting rate of absorption, dosage, interaction of one drug with another, drug tolerance, time factors, and side effects. The importance of a teacher's monitoring of the drugs is stressed, and examples of the types of teacher observation are described. (CL)

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What are the Definitive Procedures and Instruments Used to Incorporate Chemotherapy Orientation and Preparation for Effective Team Membership, During Inservice and Preservice Training of Teachers and Administrators?

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What are the Definitive Procedures and Instruments Used to Incorporate Chemotherapy Orientation and Preparation for Effective Team Membership, During Inservice and Preservice Training of Teachers and Administrators?

During the past few months, I have been asking students at Delta State and teachers in the public schools how much they need to know about medications children are placed on and how much do they currently know. I found four facts:

1. There is a general lack of knowledge about drugs and their effects on children.
2. Many teachers know something about drugs classified as stimulants and especially Ritalin when used to control hyperactivity.
3. Most teachers are afraid of the side effects of drugs.
4. Most teachers are opposed to placing children on medication.

It is important for public school personnel to know about drugs because the teacher plays a large role in drug therapy. If drugs are ignored by the public schools, their usefulness could be diminished. Since there are over 10,000 prescription drugs and another 10,000 over the counter drugs, it is certain that a number of children in most school systems will be on medication. Most teachers and administrators are completely excluded from the decision of placing children on drugs and have no contact with the person prescribing them. Therefore, school personnel frequently oppose drug therapy because of the lack of knowledge and lack of communication.

If the person prescribing childhood medications has skill and expertise in drug therapy with children and has much experience in this area, then there may be no worry or concern that drug therapy is the most appropriate alternative. However, if the drug prescription has not been specifically trained in emotional and behavioral problems of children, you as the teacher need to be more aware of potential problems and need to monitor behavior after drug therapy has begun.

In too many school systems, one or two people make placement and remedial education decisions. The best placement and remediation procedure would be one of a multidisciplinary team approach where each person working with the child offers his or her own expertise in dealing with children's problems. We are all experts in some areas but not in every area so it would be great if group decisions could be made using each person's expertise. As an example, a pediatrician is knowledgeable about health and medication and can provide input from this frame of reference. If a child has dietary or nutritional problems, a nutritionist may help parents devise diets and menus that may be needed in the child's remedial process. A social worker may help with family problems and changing the home environment. A school psychologist can provide input from the testing results working with emotional and behavioral problems. The regular teacher and special education teacher would be able to provide educational input. If the experts work together, the best remedial procedures can be determined. Then, maybe, we can say all children placed on drugs really need to be placed on drugs and the others will be treated with some other type of treatment. This is a long way off in many school systems.

The teacher and administrator needs to be aware of terminology concerning medications and also need to determine whether the child is progressing, maintaining himself, or regressing after being placed on medication. The rest of the paper concerns concepts the teacher needs to know in order to communicate about drug therapy.

It is important for the teacher to know about drug administration and related terms as many drugs are administered in the schools. Most drugs administered in the school are taken orally in liquid, tablet, or capsule form. The term, absorption, is used to indicate that the drug must be

soluable in the stomach or be changed into a fluid where it is carried into the intestine, passed through the cells of the digestive tract and then passed into the blood stream. If the drug is already in liquid form, or in a solution, it tends to be more rapidly absorbed than tablets or capsules.

There are several concerns of oral administration of drugs. Some drugs are poorly manufactured and may not dissolve or pass into the blood stream. Therefore, the drug cannot benefit the child. Other drugs may lead to vomiting or stomach problems. The amount of drug in a tablet or capsule can be calculated, but we cannot accurately predict how much of a drug will be absorbed into a specific child's blood stream. As a drug goes through the circulatory system, it is spread throughout the body. Much of the drug is in contact with remote segments of the body where no drug is needed. Other drugs cling to protein in the body and, therefore, miss contact with the segments we wish to control.

The rate of absorption can also be influenced by the following: changes in the acidity of the stomach; the presence of other drugs in the stomach; a less than adequate blood supply; illnesses influencing the rate food passes through the system; and chemicals in the food which may slow down or speed up the digestive process. Because of these problems, it is frequently recommended drugs should be administered one or two hours after eating.

It is also important to know about absorption because if the drug is given at the wrong time, the effects of the drug may wear off and the child may act as if no drugs have been administered. Or the child may get too much of the drug through overlap, creating severe problems.

A dosage is the amount of medication a child is administered at one time. It is usually assumed considerable information has been collected about dosages before the drug goes on the market. However, this is often not the

case. Much dosage information is collected on animal experiments and little on humans. Usually references using children have been made with experimental studies done on patients receiving too much of a particular drug.

On widely used drugs, we can fairly accurately estimate the therapeutic range of the drug. This, however, varies widely because of the chemical make-up of each individual. But one cannot go with the average dosage as each individual is different and it is never known how a particular drug may affect a child. So when beginning a child on a medication, one begins with a low dosage which is usually below the therapeutic range. The dosage is gradually increased until the desired response is obtained. This is called titration. Medications have recommended minimum and maximum dosages although some children do not fit into these. If unwanted or intolerable side effects emerge, the dosage needs to be reduced or stopped.

Seven to ten percent of all special education children receive more than one drug per day. Frequently, one will find medications for behavior problems and convulsive disorders. However, one may also find a child on two medications with one drug controlling the side effects of the other. Frequently, parents give a child over the counter drugs to combat various symptoms such as colds, flu, or headaches which could lead to intolerable drug interactions.

Two drugs interacting within the system may cause many problems. The absorption rate may be increased or decreased. Serious side effects may evolve. Some drugs inhibit the work of another drug. Others may break down drugs. Two drugs may affect a child's system in the same way making the medications additive, producing a serious or even fatal outcome. Many parents are unaware of or do not think about potential interaction problems so we need to remind and educate parents of this. Share your information and concerns with parents and then they may be more willing to monitor behavior at home and communicate more with the physician.

Each person reaches a tolerance level at which point the same dosage of the drug no longer has an effect on the child. In some drugs, such as Ritlan, when this happens, the physician usually just increases the dosage. Other children show dramatic improvement on the medication then suddenly become completely immune. Tolerance level has been reached. The tolerance level of some drugs is changed as the child grows and more and more drugs are needed as the child's body size becomes larger.

Repeated drug administrations may increase the rate at which drugs move through the body. Some drugs stimulate the metabolic process which is responsible for the breakdown of the drug. The child then needs more and more durgs to achieve the same effect.

The length of time a child needs to be on medication before the effects of the drug can be assessed varies from child to child. Some responses are immediate while others may take several weeks before the effects are noted. Two weeks is usually an adequate trial period unless the side effects are so devastating the drugs need to be ceased. Each child needs a drug-free period during the year in which he goes off the medications. During this time an assessment can be made for continuing a child on drugs. It is always possible the child may be cured and does not need to continue on medication. Unfortunately, many children do not receive this "drug vacation."

All drugs have side effects. Some are trivial while others seriously impair the child's health. Some side effects begin soon after drug therapy has begun while other side effects may go unrecognized for months or years. A desired drug effect for one person may be an adverse effect for another person. There are various types of side effects. One type is a functional side effect which causes a change in the function of an organ such as the side effects of the nervous system which may produce headaches, slurred speech, poor coordination, or dizziness. These are reversible and go away when

when the drug administration is stopped. A second type of side effect is biochemical, where reactions are associated with various organs. An example of this type of reaction could be an alteration in the balance of hormones in the body or changes in blood coagulation. This type of reaction is usually reversible after treatment is stopped. The third type of side effect change is the most serious and changes the structure of an organ. An example of this could be alcohol changing the structure of the liver.

Many teachers are interested in finding a source book to become knowledgeable about what side effects to watch for. First, the teacher needs to be aware of generic names and trade names to know what is being talked about. A generic name is the scientific name while the trade name is the registered trade mark of the manufacturing company. Usually parents know the trade name of a drug and use this name when discussing the drug with the teacher.

The best source of drug information is the Physician's Desk Reference, which includes sections on product names, identification, classifications, and information, generic and chemical names, and a guide to the management of a drug overdose. Other books such as Children on Medication: A Primer for School Personnel by Kenneth Gadow and published by CEC are also available.

In order for drugs to be most effective, teachers need to get information from physicians and to feed back information to them about the child's behaviors and observed side effects. The teacher's monitoring may make a difference as to whether the medication is changed, kept the same, or discontinued. Teachers receive little training regarding psychotropic and anti-epileptic drugs. Physician, teacher, and parent interaction is limited. Monitoring and evaluation procedures and instruments are poor. So the teacher is in a poor position to receive and provide good drug information.

In order to improve upon communication, it is recommended before a child is placed on medication the teacher decides exactly what the child's behaviors are. The teacher should define the behaviors that bother her the most in exact behavioral terms so that anyone can observe the behavior and know that it has occured. An example of how to keep track of the bothersome behaviors is presented in Handout 1. The teacher should keep records on the child's behavior before, during, and after drug therapy. This way the teacher determines whether the behavior decreased, maintained, or increased after drug therapy was begun.

A second procedure is presented in Handout II. This is an example of a behavior checklist to record school behavior that can be used also or can be devised to meet one's own needs. The child's behaviors are observed and a check mark placed in the appropriate column indicating the prevalence of the behavior. This should be completed before drug therapy is begun, periodically during drug therapy, and then after drug therapy has been terminated. By doing this, one can easily determine changes in the child's behavior before, during, and after drug therapy. If behavior changes to the better choice of treatment. However, if behavior changes for the worse, or if serious side effects evolve, drug therapy may have been a poor choice of treatment. Likewise, we can determine if the appropriate decision has been made to take the child off drugs. Another form one could use would be "Conner's Abbreviated Teacher Rating Scale."

Many teachers complain that physicians and psychiatrists do not want teacher input and do not want to communicate with the teachers. If a physician or psychiatrist refuses to discuss the teacher's information or to consider the information in prescribing medication, the teachers can advise the parents to see a different physician or psychiatrist. Teachers should keep an open dialogue with one or several physicians in the area. This could then

be a person to whom parents could be referred when their own physicians are uncooperative.

It is not important to know every piece of information about a child's background and everything that has ever happened to the child. In fact, one may know too much about a child which may bias one's expectations about the child's ability and performance. But one should know enough information about the child's background and ability levels so the teacher can tell if the child is functioning better or worse on drug therapy. As an example, a child with poor gross motor control problems such as hitting or catching a ball or fine motor problems such as holding a pencil appropriately before going on medication and continues to have these problems after medication has begun, it can be said medication is not causing the problem.

However, if the child is placed on medication without motor problems and develops them after medications have been initiated, one could say the medication is causing the motor problems. There is then no reason to try to remediate the problem because the problem will be eliminated when drug therapy is terminated.

The teacher also needs to know about drug classifications and the reasons for using particular drugs. This information has already been covered in the other presentations.

The final type of information the teacher needs to be concerned about is research indicating the effects of drug therapy on children in school. The most recent review of research on psychotropic drugs and learning problems was by Aman in the February, 1980, Journal of Learning Disabilities. He found that on stimulants, attention span, paired associate learning, short-term memory, and impulsivity improved. There was generally no great improvement in IQ, perception, and language ability. Small changes were shown in attention span, short-term memory, and cognitive style when the child was on

anti-depressants. Intellectual and perceptual functioning showed minimal changes. In antipsychotics, there are contradictory reports on attention span and improvement of behavior. Long-term studies failed to document lasting educational gains as a result of any of the commonly used drugs. Studies comparing treated children to unmedicated hyperactive children are generally unable to document any educational gains owing to the drugs. This then suggests if a decision to medicate is made exclusively on the basis of behavioral improvements, the cognitive and intellectual effects of the treatment may be quite unpredictable and drugs should be used only with utmost care and documentation of behavior.

Handout #1

Define in exact terms what the child does do so that each time the behavior occurs anyone can observe that the behavior has occured. Be sure to define each behavior you concerned with.

Example: If John gets out of seat frequently, and this behavior is one you wish to control, define it. Each time John lifts his posterior six inches off the chair, he is considered to be out of seat. You can simply record this behavior in chart form to determine if the behavior is increasing, decreasing or maintaining itself.

FREQUENCY

DATE	OUT OF SEAT	HITTING OTHERS	TALKING OUT
April 15	𝍸 //	///	𝍸
April 16	𝍸 /	//	𝍸 /
April 17	𝍸 𝍸	////	𝍸 //
April 18	𝍸 //	///	////
April 19	𝍸 /	//	𝍸 //

If behaviors occur with more regularity at particular periods, then record on daily period chart.

Name John Jones

Date April 17

BEHAVIORS	PERIOD I MUSIC	PERIOD II LANGUAGE	PERIOD III PLAY	PERIOD IV MATH	TOTAL
OUT OF SEAT	/	////	//	///	10
HITTING OTHERS		/	///		4
TALKING OUT	//	//		///	7
TOTAL FREQUENCY	3	7	5	6	21

SCHOOL BEHAVIOR CHECKLIST

CHILD'S NAME _____ INFORMANT _____

DATE FORM COMPLETED _____ CHRONOLOGICAL AGE _____

INSTRUCTIONS: Complete this checklist by considering the child's behaviors since the last time you completed the checklist. Check the box which best describes the child's behavior. Other observations and notes should be written at the bottom. This checklist should be completed before drug therapy is initiated, during drug therapy, and after drug therapy has been terminated.

BEHAVIORS	FREQUENCY			
	Frequently observed	Occasionally observed	Seldom Observed	Never Observed
1. Mood changes				
2. Short attention span				
3. Easily frustrated				
4. Demands attention				
5. Disturbs others				
6. Interacts with others				
7. Hyperactive				
8. Temper tantrums				
9. Distractible				
10. Impulsive				
11. Depressed				
12. Nervous				
13. Sleepy				
14. Aggressive				
15. Fidgety				
16. Complains of not feeling well				

Describe any changes in the child's academic performance